### 3.3.8.7 Emergent Aquatic – Wild Rice

#### 3.3.8.7.1 Community Overview

Emergent aquatic – wild rice is closely related to the emergent aquatic community, but has wild rice as the dominant macrophyte. Substrates supporting wild rice usually consist of poorly-consolidated, semi-organic sediments. Water fertility is low to moderate, and a slow current is present. Wild rice beds have great cultural significance to native peoples, and are important wildlife habitats.

#### 3.3.8.7.2 Vertebrate Species of Greatest Conservation Need Associated with Emergent Aquatic – Wild Rice

Nine vertebrate Species of Greatest Conservation Need were identified as moderately or significantly associated with emergent aquatic - wild rice (Table 3-186).

**Table 3-186. Vertebrate Species of Greatest Conservation Need that are (or historically were) moderately or significantly associated with emergent aquatic - wild rice communities.**

| ***Species Significantly Associated with Emergent Aquatic - Wild Rice*** |
|---|
| **Birds** |
| Trumpeter Swan |
| **Herptiles** |
| Blanding's Turtle |
| ***Species Moderately Associated with Emergent Aquatic - Wild Rice*** |
| **Birds** |
| American Black Duck |
| Blue-winged Teal |
| Canvasback |
| Redhead |
| Lesser Scaup |
| Black Tern |
| **Herptiles** |
| Mink Frog |

In order to provide a framework for decision-makers to set priorities for conservation actions, the species identified in Table 3-186 were subject to further analysis. The additional analysis identified the best opportunities, by Ecological Landscape, for protection, restoration, and/or management of both emergent aquatic - wild rice and associated vertebrate Species of Greatest Conservation Need. The steps of this analysis were:

- Each species was examined relative to its probability of occurrence in each of the 16 Ecological Landscapes in Wisconsin. This information was then cross-referenced with the opportunity for protection, restoration, and/or management of emergent aquatic - wild rice in each of the Ecological Landscapes (Tables 3-187 and 3-188).

- Using the analysis described above, a species was further selected if it had both a significant association with emergent aquatic - wild rice and a high probability of occurring in an Ecological Landscape(s) that represents a major opportunity for protection, restoration and/or management of emergent aquatic - wild rice. These species are shown in Figure 3-45.

**Table 3-187. Vertebrate Species of Greatest Conservation Need that are (or historically were) *significantly* associated with emergent aquatic - wild rice communities and their association with Ecological Landscapes that support emergent aquatic - wild rice.**

| Emergent Aquatic - Wild Rice | Birds (1)* | Herptiles (1) |
|---|---|---|
| Ecological Landscape grouped by opportunity for management, protection, and/or restoration of this community type | Trumpeter Swan | Blanding's Turtle |
| **MAJOR** | | |
| Northern Highland | | |
| Northwest Sands | | |
| Superior Coastal Plain | | |
| **IMPORTANT** | | |
| North Central Forest | | |
| Southeast Glacial Plains | | |
| Western Coulee and Ridges | | |
| **PRESENT (MINOR)** | | |
| Central Lake Michigan Coastal | | |
| Central Sand Hills | | |
| Central Sand Plains | | |
| Forest Transition | | |
| Northeast Sands | | |
| Northern Lake Michigan Coastal | | |
| Western Prairie | | |

Color Key

= HIGH probability the species occurs in this Ecological Landscape

= MODERATE probability the species occurs in this Ecological Landscape

= LOW or NO probability the species occurs in this Ecological Landscape

*** The number shown in parentheses is the number of Species of Greatest Conservation Need from a particular taxa group that are included in the table. Taxa groups that are not shown did not have any Species of Greatest Conservation Need that met the criteria necessary for inclusion in this table.**

**Table 3-188. Vertebrate Species of Greatest Conservation Need that are (or historically were) *moderately* associated with emergent aquatic - wild rice communities and their association with Ecological Landscapes that support emergent aquatic - wild rice.**

| Emergent Aquatic - Wild Rice | Birds (6)* | | | | | | Herptiles (1) |
|---|---|---|---|---|---|---|---|
| Ecological Landscape grouped by opportunity for management, protection, and/or restoration of this community type | American Black Duck | Blue-winged Teal | Canvasback | Redhead | Lesser Scaup | Black Tern | Mink Frog |
| **MAJOR** | | | | | | | |
| Northern Highland | | MODERATE | MODERATE | | HIGH | HIGH | HIGH |
| Northwest Sands | | HIGH | MODERATE | | HIGH | HIGH | MODERATE |
| Superior Coastal Plain | | HIGH | MODERATE | | HIGH | HIGH | HIGH |
| **IMPORTANT** | | | | | | | |
| North Central Forest | | | MODERATE | | HIGH | MODERATE | HIGH |
| Southeast Glacial Plains | | HIGH | HIGH | HIGH | HIGH | HIGH | |
| Western Coulee and Ridges | | HIGH | HIGH | | HIGH | MODERATE | |
| **PRESENT (MINOR)** | | | | | | | |
| Central Lake Michigan Coastal | | HIGH | MODERATE | | HIGH | HIGH | |
| Central Sand Hills | | HIGH | | | | HIGH | |
| Central Sand Plains | | HIGH | MODERATE | | HIGH | HIGH | |
| Forest Transition | | HIGH | MODERATE | | HIGH | HIGH | |
| Northeast Sands | | | | | | | HIGH |
| Northern Lake Michigan Coastal | | HIGH | HIGH | | HIGH | HIGH | HIGH |
| Western Prairie | | HIGH | MODERATE | | MODERATE | MODERATE | |

Color Key

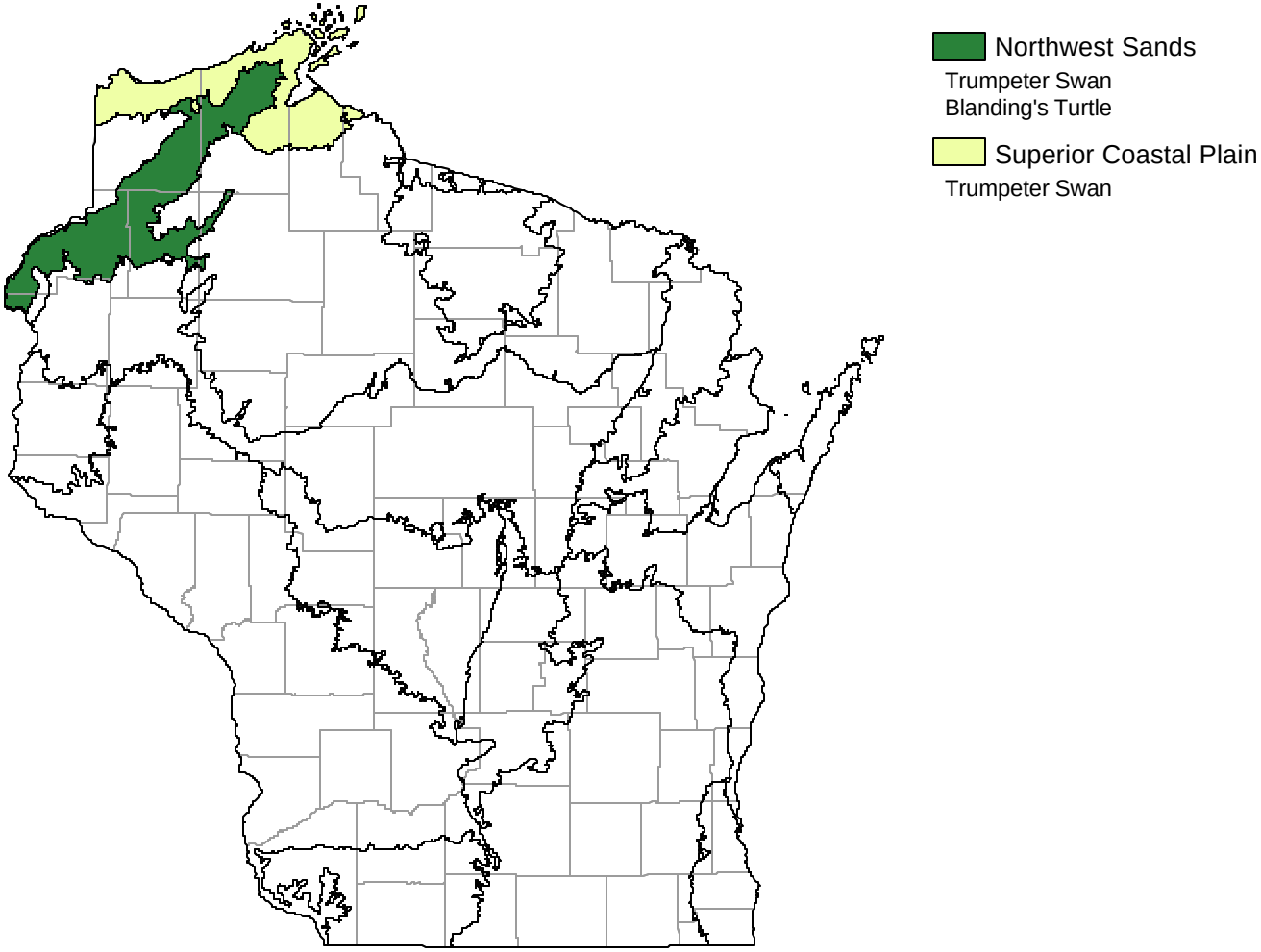
HIGH = HIGH probability the species occurs in this Ecological Landscape

MODERATE = MODERATE probability the species occurs in this Ecological Landscape

= LOW or NO probability the species occurs in this Ecological Landscape

*** The number shown in parentheses is the number of Species of Greatest Conservation Need from a particular taxa group that are included in the table. Taxa groups that are not shown did not have any Species of Greatest Conservation Need that met the criteria necessary for inclusion in this table.**

**Figure 3-45. Vertebrate Species of Greatest Conservation Needthat have *both* a significant association with emergent aquatic - wild rice *and* a high probability of occurring in an Ecological Landscape(s) that represents a major opportunity for protection, restoration and/or management of emergent aquatic - wild rice.**



### 3.3.8.7.3 Threats and Priority Conservation Actions for Emergent Aquatic – Wild Rice

#### 3.3.8.7.3.1 Statewide Overview of Threats and Priority Conservation Actions for Emergent Aquatic – Wild Rice

The following list of threats and priority conservation actions were identified for emergent aquatic-wild rice in Wisconsin. The threats and priority conservation actions described below apply to all of the Ecological Landscapes in Section 3.3.8.7.3.2 unless otherwise indicated.

Threats and Issues

- Disturbance from recreational powerboats can cause sedimentation and physical damage to aquatic plants.
- Weed removal and use of pesticides damage habitat and encourage invasives.
- Lakeshore/rivershore development can alter shoreline habitat and increase erosion.
- Sedimentation, eutrophication, and pollution of water can cause detrimental changes to community composition, structure, and function. Mercury, polychlorinated biphenyls and other pollutants are a serious issue in some northern Ecological Landscapes (e.g., Northern Highland, Northern Lake Michigan Coastal, Northwest Sands, and Northwest Lowlands).
- Invasive plants can replace native plants and affect aquatic communities.
- Dams and impoundments can raise water levels to the detriment of this community type.

Priority Conservation Actions

- This community type should be managed as a complex with other forest and wetland types.
- Protect more of this community type by working with conservation managers and interest groups.
- Consider adopting no-wake zones to protect vegetation.
- Buffer uplands and manage shorelines to prevent erosion and sedimentation, and to limit pollutant inputs.
- Restore shorelines where feasible.
- Restore hydrology where possible. Maintain cycles of fluctuating water levels, based on additional studies that characterize appropriate cycles and timing.
- Additional surveys are needed to locate high quality community occurrences and rare species' populations on shorelines and in associated marsh habitats. Plot sample data are needed for documentation of species composition and diversity.
- Continue and support research to find biocontrols for invasives; control spread of new invasives. Control existing invasives on a site-by-site basis.
- Continue current system of tribal and state rice bed restoration and harvest regulation, and evaluate the benefits of expanding this oversight to other rice-bearing water bodies.

#### 3.3.8.7.3.2 Additional Considerations for Emergent Aquatic-Wild Rice by Ecological Landscape

Special considerations have been identified for those Ecological Landscapes where major or important opportunities for protection, restoration, and/or management of emergent aquatic–wild rice exist. Those considerations are described below and are in addition to the statewide threats and priority conservation actions for emergent aquatic-wild rice found in Section 3.3.8.7.3.1.

Additional Considerations for Emergent Aquatic-Wild Rice in Ecological Landscapes with ***Major*** Opportunities for Protection, Restoration, and/or Management

*Northern Highland*

This Ecological Landscape contains some unique and sensitive marsh types. It is one of the state's most important for the maintenance and protection of wild rice beds. Large areas in public ownership help to ensure the viability of this community here. Wild rice still occurs on numerous lakes; however, intensive lakeshore development has significantly degraded some areas. Tribal members and other citizens gather significant quantities of wild rice here. Wild rice should be protected and restored where possible, seeking partnerships with Great Lakes Indian Fish and Wildlife Commission and other entities as appropriate. Aurora Lake and Wetlands (Vilas County) supports a healthy wild rice population.

*Northwest Sands*

Cranberry operations, though currently limited here, have the potential to decrease the amount of wetland habitat, alter natural communities, and affect local hydrology and water quality. An appreciable number of lakes still support viable wild rice beds. Some of the larger marshes in this Ecological Landscape occur along impounded portions of rivers or small streams. Protect and restore wild rice where appropriate, in coordination with tribal projects if possible.

*Superior Coastal Plain*

Disturbance from recreational powerboats coming into rivers from Lake Superior can cause sedimentation and physical damage to aquatic plants as well as problematic social interactions. Eutrophication (in St. Louis River estuary, Port Wing) can cause detrimental changes to community structure. Invasive plants (e.g., purple loosestrife, Phragmites, reed canary grass) have replaced native plants in some areas. Soil erosion and sedimentation from uplands into water bodies is a particular threat in this Ecological Landscape due to the erodible soils. Agriculture, impermeable surfaces, and lack of conifers contribute to peakflow episodes during spring snowmelt. Unsustainable forest management practices can result in soil erosion and water quality issues.

Wild rice should be restored where possible; rice beds in the Kakagon Sloughs (Ashland County) should be protected and maintained. Uplands within the watershed should be reforested, restoring conifers where possible. Best Management Practices and other sustainable forest management practices should be used to limit detrimental soil and water effects. Adaptive management techniques should be used to restore structure and composition. More information on land use in the watershed should be gathered and effects on peakflows into emergent aquatic community sites should be researched.

Additional Considerations for Emergent Aquatic-Wild Rice in Ecological Landscapes with ***Important*** Opportunities for Protection, Restoration, and/or Management

*North Central Forest*

Invasive plants (e.g., purple loosestrife) can replace native plants. Dams have raised water levels and affected this community type in some sites but created marsh habitat in locations further upstream. Wild rice should be protected and restored where appropriate. Wabikon Lake (Forest County) supports a valuable wild rice population and Swamp Creek (Forest County) contains important wild rice stands.

*Southeast Glacial Plains*

Invasive plants (e.g., Phragmites, reed canary grass, purple loosestrife, flowering rush, glossy buckthorn, narrow-leaved cattail) can replace native plants and affect aquatic communities. Many marshes are becoming highly dominated by cattails. Botulism is a concern when oxygen content is low. Remaining lead shot in hard-bottomed water bodies still occasionally results in poisoning. Carp are a threat, and so are effects of carp control efforts. There are continuing effects of past management (e.g., draining and filling marshes, loss of wild rice).

This Ecological Landscape formerly included many marshes that supported wild rice. The Wolf River Wildlife Area (Winnebago County) still supports a good population of rice. Wild rice should be restored if possible (although most systems are too hydrologically altered and sediment-filled to support wild rice). Watersheds should be managed to control runoff from surrounding agricultural areas that may contribute nutrients and sediment. Drawdowns for shorebird management are effective, but the needs of amphibians and reptiles should be considered; consider timing drawdowns to reduce the threat of botulism. These sites should be monitored to determine whether management is maintaining native diversity and the effects of non-native cattails should be researched.

*Western Coulee and Ridges*

Development on ridges above rivers can alter shoreline habitat and increase erosion. Rip-rapping, levees, seawalls, and dikes have been constructed (these have some positive effects in protecting marshes behind dikes). Invasive plants (e.g., reed canary grass, purple loosestrife) can replace native plants. Invasive animals (e.g., common carp) are also a problem for this community type. An astounding abundance of dams in this Ecological Landscape raised water levels to eliminate this community type in some sites, but created marsh habitat in other locations. Dams also change timing and duration of water level fluctuations. Barge traffic on the Mississippi requires dredging and disposal of materials, which stirs up bottom sediments, and results in wave impacts. Past drainage for agricultural uses, and filling for roads, railroads, and industrial sites, reduced marsh habitat. Competing economic interests limit opportunities for this type in the Ecological Landscape, especially in the Mississippi River valley.

Wild rice should be protected and restored where appropriate. The Mississippi River corridor is of continental importance to migratory waterfowl. This community is found primarily in the backwaters of large rivers (e.g., Mississippi (Grant, Crawford, Pepin, Pierce, Trempealeau Counties), Chippewa (Pepin and Buffalo Counties), Wisconsin (Crawford and Grant Counties), and Black Rivers (LaCrosse County)). This community should be managed as a complex with floodplain forest, submergent marsh, wet meadow, shrub-carr, and adjoining uplands. Advocating for river flow management and other actions that are more beneficial to emergent plant communities, fish, and wildlife should continue.